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Status of Efforts to Improve Efficiency of the USQ Process and Status of Efforts to Improve Efficiency of the USQ Process Expert USQD Panel

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Disclaimer

Status of Efforts to Improve Efficiency of the USQ Process May 2010

Facilitated by

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Big picture – *Is there a better way?*

- DOE can greatly benefit from a more efficient USQ process
  - This is a prime example for Secretary Chu's initiative for cost savings
- DOE USQ process voraciously consumes limited DOE resources
  - Concern that this is not a wise stewardship of taxpayer dollars
  - USQ process as described in DOE G 424.1-1A and implemented at most of the DOE sites is overly burdensome.
  - Interpretations of DOE G 424.1-1A, as interpreted differently by local DOE Site Offices and as enforced from audits, has resulted in review of excess work documents and requires significant documentation.
    - Regulation by Enforcement
    - Inefficiencies result
  - USQ process has grown beyond original intent required by 10 CFR 830.
- *Is there a better way?*

SAWG White Paper to Improve the USQ Process

- Prioritized set of recommended actions to improve efficiency of USQ process, allowing for better stewardship of taxpayer resources and limited DOE funding.
- Benefits include:
  - ✓ Minimize direct and indirect costs for implementation;
  - ✓ Focus on key safety issues;
  - ✓ Focus manpower on high priority and value added work,
  - ✓ Minimize unnecessary schedule delays.
- Clarify topics to increase efficiency of USQ process until subsequent revision of DOE USQ Guide.
- Found by years of experience, many USQ reviews do not add value and are not necessary for implementing 10 CFR 830.203.
  - ✓ Risk (that a change requiring DOE approval is not submitted to DOE for approval) insufficient to warrant $20 to $40 million/year of additional unnecessary expense.
  - ✓ Low risk of missing USQs, and high confidence that contractors are applying process correctly in accordance with 10 CFR 830.
- Safety management programs are managed under their own regulatory structure (e.g., 10 CFR 835 and 10 CFR 851).
  - ✓ Verified by ISMS processes.
  - ✓ Reverified by periodic ISMS reverfications.
- Years of operating experience show this approach works.

The USQ process can be improved, becoming more efficient and effective.

Perform Better, Efficiently, and Effectively

- USQ Subgroup believes proposed recommendations will effectively streamline USQ process while maintaining necessary rigor to ensure proposed activities that require DOE approval, do so.
  - Recommendations do this by:
    - Reducing number of changes that enter USQ process,
    - Appropriately relying upon existing regulatory infrastructure for safety management programs,
    - Reducing level of documentation and time required for performing each level of USQ review (e.g., Screen, USQD),
    - Reducing number of USQDs required,
    - Reducing time and resources spent on the back end of the process, dealing with confusion caused by varying interpretations.
  - Limit USQ Process to its main purpose - “Determination of Approval Authority.”
    - USQ Process is not change control or determining if change is safe.
    - Do not duplicate role of safety management programs.
    - Do not require excessive documentation nor level of detail; focus DOE's limited resources on key issues.

Explanation of Problems with Existing USQ Process

- USQ process overly burdensome without commensurate value to implementing 10 CFR 830.203
  - Too much enters USQ process (e.g., trivial changes that could never warrant DOE approval):
    - Routine maintenance packages enter USQ process
    - Safety Management Programs (SMPs) enter USQ process
  - Too many changes elevated within USQ process to USQDs and require excessive level of detail and documentation
    - USQDs required to be at level of detail far beyond what merited by risk that a change requiring DOE approval is not submitted to DOE for approval
  - Lack of clarity in DOE USQ Guide flows into problems with local implementing procedures and auditors
    - Further, it makes USQ process subjective
  - DOE Complex has been whipsawed by changes in auditing interpretations by different auditors on multiple occasions
    - Too much variability in interpretation of details in USQ process driving excessive workload

Explanation of Problems with Existing USQ Process - continued

- USQ process is overly burdensome without commensurate value to implementing 10 CFR 830.203.
  - Too much enters USQ process (e.g., trivial changes that could never warrant DOE approval):
    - Safety Management Programs (SMPs) enter USQ process
    - Significant duplicate effort of technical reviews of safety management programs
      - Original discussion of safety management programs in Introduction to DOE-STD-3009-94 (pg. 9) implies it was not intent of Standard to require infrastructure of safety management programs to routinely be submitted to USQ process.
      - Concept should be revisited as there are extensive costs with such routine submittals that are largely redundant given that entire staffs of safety management experts oversee those programs.

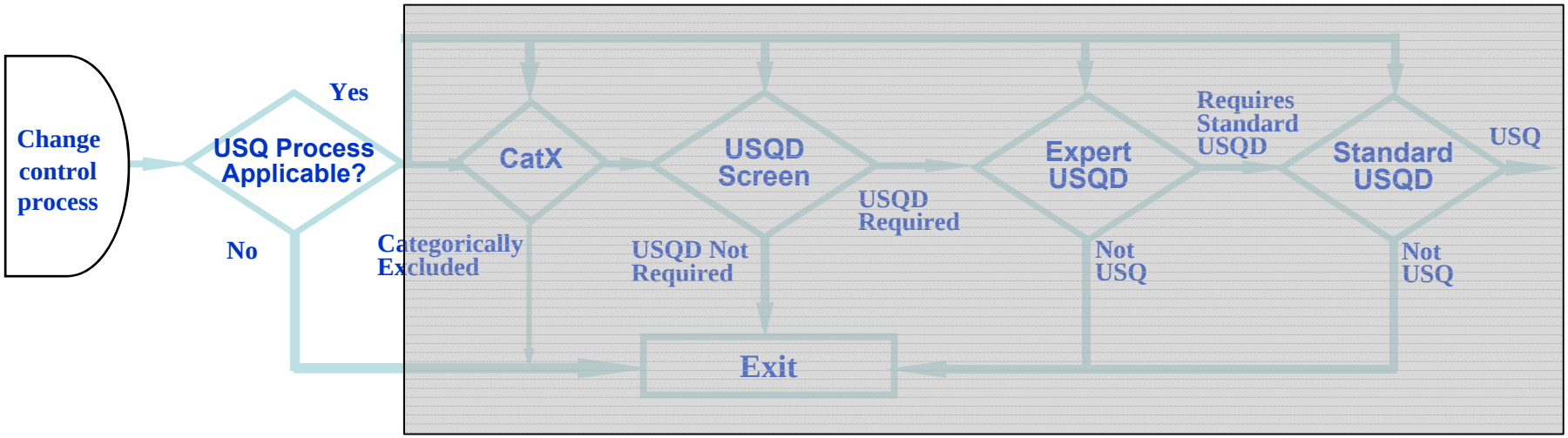
Summary of Recommendations to Improve Efficiency

- White paper recommendations to improve efficiency of USQ process
  - Clarification of Applicability Assessment
    - Temporary or Permanent Changes in a Facility
      - Routine maintenance package
      - Interim state hazards
    - Temporary or Permanent Changes in the Procedures
      - Safety management program procedures
      - Administrative procedures
  - Improving Efficiency of the Integrated USQ Process
    - Screening
    - Expert USQD
  - Clarification of sufficient level of documentation for Applicability Assessments, Screening, Standard USQD
  - Clarification of Terminology/Definitions
  - Conduct DOE Complex-wide meeting reflecting USQ process improvements to ensure a consistent approach across DOE Offices, Field Offices, Service Centers, and Assessment Organizations

Integrated USQ Process

- Overall purpose of the USQ process is to determine who has approval authority – DOE or the contractor.
  - USQ process integrated into facility change control processes.
    - Change control processes ensure that USQ process is integrated into existing procedures, or that new procedures are developed as necessary, and that need for entry into USQ process is not overlooked.
  - Purpose of USQ process is not to duplicate other aspects of the change control process or safety management programs covered by other DOE requirements (e.g., 10 CFR 835, 10 CFR 851).
    - Not quality assurance, configuration management, design control, nor whether change is safe.
  - Note that as part of facility change control process, applicability assessments determine if USQ process is applicable; they are not USQ documents.

USQ Process Integration with Change Control Process



Relationship of USQ process and change control.
Highlighted portion of figure summarizes USQ process.

Clarification of Applicability Assessment

- Entry to USQ process is determined by an applicability assessment consistent with DOE-approved USQ procedure.
- This assessment is part of facility's change control process; it does not need to be documented for USQ process and not subject to document retention requirements of 10 CFR 830.
  - Examples of changes that are excluded from the USQ process are:
    - Changes to purely administrative procedures,
    - Changes to non-nuclear facilities that cannot effect nuclear facilities,
    - Changes that already require DOE approval such as Training Implementation Matrix (TIMs) and Technical Safety Reports (TSRs), and
    - Routine maintenance as described below.
  - Such exceptions may be described in the DOE-approved USQ procedure, but implementation occurs in other programs and procedures.
  - It is important, however, that applicability assessment not be used to circumvent proper entry into USQ process.
- Documents produced within the USQ Process which must be prepared by qualified USQ personnel are subject to document retention requirements of 10 CFR 830.
  - This includes Categorical Exclusions, USQS, Expert USQDs, and USQDs; but does NOT include Applicability Assessments.

Clarification of Applicability Assessment - Facility

Routine Maintenance

- Routine maintenance is not a change to the facility.
  - Routine maintenance activities do not require review under 10 CFR 830.203.
  - Routine maintenance activities include calibration, refurbishment, part replacement, and housekeeping.
  - SSC not considered changed by routine maintenance activities that restore SSC to its original condition (e.g., refurbishment, exact replacement, or approved equivalent part).
    - Note, however, that interim conditions require further thought (see discussion below).
- Important to distinguish between changes and routine maintenance activities.
  - Modifications that cumulatively and significantly alter capability of system, e.g., plugging heat exchangers and thereby changing attainable heat flux, is a modification and should be entered into USQ process.

Clarification of Applicability Assessment – Facility (continued)

Interim State Hazards

- DOE relies on the contractor's normal work control procedures
  - Work control procedures address worker hazards involved in installation of modification, not on USQ process.
    - These procedures implement safety management program requirements including radiation protection, hazardous material protection, work planning and control, OSHA, ALARA, and lockout/tagout.
- Examine safety basis for what has been evaluated for interim conditions
  - Do NOT enter USQ process
    - Interim conditions dictated by standard safety management programs, such as general rigging and scaffolding considered in safety basis.
  - DO enter USQ process
    - Interim conditions that change how facility operates, in a manner not described by procedures already subject to USQ process.
    - Such changes could include: rerouting ventilation to utilize temporary ducting, temporary changes such as jumpers and lifted leads, temporary blocks and bypasses, and equipment used on temporary basis in lieu of installed equipment.
    - Work involving unique initiators performed outside standard safety management programs is subject to USQ process.

Clarification of Applicability Assessment – Facility (continued)

Interim State Hazards (continued)

- Examples
  - If work involves interrupting a water supply that a fire protection system depends on, in a manner not covered by a TSR, that interruption should be examined through the USQ process.
    - Modifications that are performed in separate, distinct stages may also leave affected SSCs in conditions not addressed by a USQD that evaluates only the final modification configuration but not the interim times between stages.
  - Work authorization system should include a step to consider these types of possibilities.
    - Critical lift over EITS is not considered general rigging.
    - Lift which is performed by specific work instructions which has been submitted to USQ process is not itself subject to USQ process.
    - However, critical lift which is not performed to work instruction subject to USQ process is subject to USQ process.

Clarification of Applicability Assessment - Procedures

- NOT procedures subject to USQ process
  - Purely administrative documents (e.g., 401k, finance, procurement, travel procedures)
- Procedures subject to USQ process
  - Procedures that implement a safety management program (SMP) described in the safety basis,
  - Procedures for implementing a specific administrative control (SAC), and
  - Operating, testing, surveillance, and maintenance procedures for equipment important to safety.
- Procedures are not limited to those specifically identified by type (for example, operating, chemistry, system, test, surveillance, and emergency planning) but also include written direction as described in the DSA that defines or describes activities or controls over the conduct of work.
- *So what are the implicit procedures?*

Clarification of Applicability Assessment – Procedures (continued)

- Implicit procedures subject to USQ process
  - Documents that direct work in nuclear facility (other than routine maintenance as described above in this white paper).
  - Documents that capture configuration in nuclear facility and nuclear support facilities credited in safety basis
    - I.e., facilities that provide function to nuclear facility [e.g., control room, or fire protection pump house].
  - Documents used to capture initial conditions and assumptions used in hazard analysis in safety basis.
  - Documents used to capture qualification, evaluation (including failure modes) of equipment in nuclear facility (e.g., hazard analysis and accident analysis).
  - Documents that implement the TSR administrative controls.
- Documents that do not meet the above should not enter the USQ process.
- Note: new procedures for new operations undergoing an IVR, RA, or ORR that have a nuclear safety review do not enter the USQ process.

Clarification of Applicability Assessment – Procedures (continued)

Safety Management Program Procedures

- Consideration of safety management program (SMP) procedures is complex
- SMPs governed by DOE, national requirements, contractual requirements
  - A fundamental and inherent premise of safety bases.
  - 3 relevant Code of Federal Regulations (CFRs): 10 CFR 830, 835, and 851.
  - Therefore, any changes to SMP procedures would need to be consistent with safety management program governing document.
    - DOE approval NOT required for changes consistent with contractual or legal requirements.
  - Relationship between safety basis and Integrated Safety Management Program recognized in 10 CFR 830 Appendix A.
- 3 CFRs and other requirements are connected
  - Following areas may need to be considered for whether DOE approval necessary (i.e., USQ process applicable).
    - Consideration may be given to whether USQ process is appropriate for SMP procedures which implement safety management programs required as part of ISMS.
    - Given this complexity, one possible approach is to consider adding an applicability assessment/sanity check by safety analysts for SMP procedures as to whether they need to enter USQ process.

Clarification of Applicability Assessment – Procedures (continued)

Safety Management Program Procedures (continued)

- Considerations for whether USQ process is applicable for SMP procedures include:
  - What documents preserve the initial conditions and assumptions of the safety basis (e.g., DSA/TSR) and thus what does the USQ process need to review regarding SMP procedures?
  - Is the change specifically defined in the DSA/TSRs beyond typical DOE safety management program requirements, e.g., minimum shift levels, numerical setpoints, SACs?
  - Does the change protect the initial conditions and assumptions in the safety basis (e.g., hazard analysis), e.g., motor vehicle speeds, CAM setpoints?
  - Is the change a deviation from programmatic commitments in the safety basis (process, not procedure changes)?

Clarification of Applicability Assessment – Procedures (continued)

Safety Management Program Procedures (continued)

- Based upon the above discussion, consider the following further considerations.
  - Consider DSA/TSR implementation flowdown.
    - Top level procedures that implement safety basis SMPs enter USQ process.
    - Upper tier policies and plans that do not implement safety basis SMPs do NOT enter USQ process.
    - Other, lower tier technical discipline procedures describe skill-of-the-craft for which a safety discipline (e.g., health physics) staff is specifically maintained to provide subject matter expertise (SME) guidance and evaluation
      - E.g., the exact way in which postings are to be configured in any facility, portable survey meter positioning and movement, and other subjects.
      - DSA is not intended to address such details per DOE-STD-3009.
      - Such procedures should not be identified as falling within USQ process.

Screening

- Screening is within USQ process
  - Question for screening decision is NOT whether affected item (SSC, procedure, or activity) is described in safety basis, but whether change fundamentally alters description in DSA.
    - If SSC, procedure, or activity continues to be appropriately and adequately described in DSA as written, a USQ screening is allowed.
    - Screening is intended to be simple go/no-go decision-making step.
      - Require only comparative reading of change against DSA description and should not take on character of asking and/or answering seven USQD questions.
      - SSC would typically be considered changed *as described in the DSA* (and thus NOT eligible for screening) if any of following altered:
        (1) Function(s),
        (2) Method of performing those functions,
        (3) Design configuration beyond installation of an exact replacement or approved equivalent part,
        (4) Change in conditions under which SSC may perform its function, or
        (5) Introduction of other components or factors that may compromise or challenge operation of EITS (e.g., installing a water pipe over electrical switchgear).
    - New or revised procedure verified to be consistent with DSA (i.e., characteristics of a safety management program, SAC, operation, test, surveillance, or routine maintenance activity described in safety basis remain correct, complete, and valid) can be screened.
  - It is anticipated that the majority of procedure changes can be screened.

Screening (continued)

- When appropriately streamlined, a screening decision can often be completed in a matter of minutes.
  - Rationale for screening should be briefly stated in terms of guidance above.
    - If full-page explanations deemed necessary, do NOT screen.
    - Screening performed only by personnel qualified to perform USQDs.
    - If preparer or reviewer finds themselves asking seven USQD questions to justify a screen, do NOT screen.
  - Screening consideration also is given to possibility that matter being considered is fully covered by previous USQD (even when location differences are considered).
    - Such screenings should document USQD being referenced and explain how change being considered is adequately addressed by that USQD.

Expert USQD Details

- Short form, expert-based USQD, tailored to evaluate simpler proposed changes, may significantly increase efficiency of USQ Process.
  - Purpose of Expert USQD is to quickly determine, with minimal documentation, whether change is not a USQ, or requires further evaluation in Standard USQD.
  - Expert USQD Worksheet may be applied to certain proposed changes where it is readily apparent to safety basis professionals that the change cannot create a USQ.
  - Expert USQD incorporates a review checklist, modeled after USQD questions.
    - However, checklist questions may be adjusted at discretion of local DOE Site Office.
  - Outcomes of Expert USQD are either:
    - Proposed change does not represent a USQ, or
    - Change requires additional review via a Standard USQD.
  - For those proposed changes found not to represent a USQ, the preparer may document any considerations deemed relevant as to why it is readily apparent a USQ would not exist.
    - Documentation should be brief and focused, and not be commensurate with level of detail for a Standard USQD.
    - Expert USQDs still require same review and approval as a Standard USQD, although they must also be designated as "experts".

Expert USQD Details (continued)

- Contractor's USQ procedure should specify stricter qualification requirements for "experts."
  - Intent is not to plug any preparer available into a rotating "expert" slot.
  - Experts should have:
    - More lengthy career experience than average USQD preparer,
    - Thorough knowledge of facility and its operations as demonstrated by documented, sustained experience at facility, and a history of preparing USQDs for that facility.
- Contractor's USQ procedure should include mechanism for formally defined list of experts approved by contractor's institutional safety basis organization.
  - Stringent qualification requirements for "experts" are key to implementation.
  - Only most experienced and trained personnel in facility, its processes, and Safety Basis should qualify to sign as expert preparer.

DOE General Counsel Q&A – April 12, 2010

- Question: Does 10 CFR 830 require contractors to utilize DOE Guide 424.1?
- General Counsel Answer: NO
- "The reasons for the "no" are many."

1. According to DOE O 251.1C, para. 5.d*, DOE Guides are not mandatory and cannot be made mandatory by reference in an Order, Notice, appendix to a directive or Technical Standard.
2. DOE G 424.1-1A, *Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements* (the current version of the Guide referenced in your question) (hereafter, "Guide") states that "This Guide imposes no requirements."
3. No provision in 10 C.F.R. Part 830 that requires compliance with the Guide. Note that there is no reference to the Guide in 10 C.F.R. Sec. 830.203, *Unreviewed Safety Question Process*. Also, reliance on Para. H.3. in Appendix A to Subpart B of Part 830 (hereafter "Appendix A") to state that compliance with the Guide is required is misplaced. The first paragraph in Appendix A specifically states that "This Appendix does not create any new requirements."
4. And, finally, ***nothing*** in Appendix A, para. H.3. states that compliance with the Guide is mandatory: "3. DOE Guide 424.X, *Implementation Guide for Addressing Unreviewed Safety Question (USQ) Requirements*, provides DOE's expectations for a USQ process. The contractor must obtain DOE approval of its procedure used to implement the USQ process." Note, the only requirement stated in para. H.3. is merely a restatement of the 10 C.F.R. Sec. 830.203 requirement to obtain DOE approval of the procedure used to implement the USQ process. Reference to the Guide is intended to be an aid, as is the Guide itself, and does not make compliance with the Guide a requirement.

Where do we go from here?

- Overall Objective:
  - Focus on improving USQ process to perform better, increase efficiency, better utilize limited DOE resources, and reduce second guessing by auditors
- Path forward:
  - SAWG issues USQ white paper
  - Conduct DOE Complex-wide meeting to ensure consistency
  - Implement recommendations of USQ white paper

Additional Details of USQ White Paper

Clarification of Sufficient Level of Document in AAs

- Applicability Assessments may be conducted as part of change control process, work control procedure, work package process, work authorization process, or procedure for procedures.
  - Applicability assessment may or may not be documented, depending on particular subtleties of requirements in integrated USQ process (i.e., DOE-approved USQ procedure).
    - Applicability assessments is performed by personnel in accordance with DOE-approved USQ procedure.
  - There may be situations where applicability assessment is documented,
    - E.g., for consideration of whether a change has no impact on nuclear facility safety basis (yes/no).
    - This may be done for consideration of whether particular procedures are subject to the USQ process as discussed above in discussion on procedures.
      - An applicability assessment signature by USQ qualified personnel on a change package suffices as sufficient documentation that change does not impact nuclear facility safety basis and thus does not need to enter USQ process.
      - Focus is on review of the change, not on documentation of change.
      - Appropriate emphasis may be placed on enforcement rather than documentation.

Clarification of Sufficient Level of Document in Screening

- Screening of proposed activity can be documented with only an approval signature from a qualified individual on proposed work document.
  - Screening signature on a procedure suffices as sufficient documentation that the change does not require a USQD.
  - Focus is on review of the change, not on the documentation of the review.
  - Conducted by qualified USQ personnel.
  - Appropriate emphasis may be placed on enforcement rather than documentation.
  - 10 CFR 830 does not prescribe any formal or required screening element, but rather dictates only a USQ Determination when a change is identified.
  - Given “go-no-go” intent from existing DOE USQ Guide, decisions for identifying a change should be relegated to a signature as discussed above.

Clarification of Sufficient Level of Document in Standard USQD

- Contractor's USQ procedures should include documenting defensible technical explanations based on sound engineering judgment for each answer to the seven questions.
  - USQ procedure should identify the level of detail necessary to document performance of a Standard USQD and conclusions reached; specification of references relied on to reach the conclusions; and guidance for the retention of records.
  - Documentation should be complete in the sense that a qualified independent reviewer, trained in USQ process, could agree with overall USQD conclusion on the appropriate approval authority – DOE or the contractor.
    - Standard USQD contains appropriate level of detail if it provides sufficient information to understand the change and its relation to the DSA, i.e.,
      - Fundamental details of the change necessary to have a cohesive mental picture of the change; and
      - Basis for judgments relative to the safety basis.
    - USQD does not need to restate text contained in DSA.
    - Acceptable for reviewers to ask for clarifications of USQD content or DSA details.
  - Target audience is a degreed engineer or scientist with several years of experience in DOE Nuclear Complex, but not necessarily at facility in question.

Clarification of Terminology/Definitions

- **Margin of safety:**
  - A margin of safety is a delta between two values for the same parameter explicitly identified in the TSRs, i.e., Safety Limit (SL) basis section For example, the design pressure for a pressure vessel cited in the TSR (the Safety Limit) may be 500 psi and the Limiting Condition for Operation may be 400 psi, therefore the margin of safety is 100 psi. Another example, the design pressure for a pressure vessel cited in the TSR (the Safety Limit) may be 500 psi and the value at which the pressure vessel would burst is 600 psi, therefore the margin of safety is 100 psi. The margin of safety is explicitly identified in the DSA/TSR, it is not implicit. A control not carried forward to the TSR is not a margin of safety.

- **Equipment important to safety (EITS):**
  - Structures, systems, and components (SSCs) whose function can affect safety either directly or indirectly, in a substantial way. This includes safety class and safety significant SSCs, including support systems to these systems that are necessary for the safety function, and other systems that perform an important defense-in-depth function, equipment relied on for safe shutdown, and in some cases, process equipment. EITS, as a class, goes beyond Safety SSCs but is not expected to include the majority of SSCs in a facility. This white paper clarifies that one example, a best practice from lessons learned, is to document EITS on the DOE approved list of EITS for a given safety basis (which may be contained in the DSA or maintained separately subject to DOE approval). Note that this is not a requirement.

Abstract

This paper presents the status of proposed efforts to improve the efficiency and effectiveness of the USQ process, including the EFCOG SAWG white paper. The proposal is a prioritized set of recommended actions to improve efficiency of the USQ process, allowing for better stewardship of taxpayer resources and limited DOE funding. Benefits include: minimizing direct and indirect costs for implementation; focusing on key safety issues; focusing manpower on high priority and value added work, minimizing unnecessary schedule delays. Clarification of these topics would increase efficiency of the USQ process.

This paper includes discussion of proposals to expedite the USQ process that address: entry to the USQ process/applicability assessments, submittal of procedures and maintenance to the USQ process, the role of safety management program oversight vis a vis the USQ process, acceptable Screening, and expert USQDs. The paper also includes an explanation of existing problems with existing DOE USQ process, implications of existing problems, and how the proposal will help. The pros/cons of different approaches is also considered with respect to compliance with 10 CFR 830.203(g).

This paper also includes status on the implementation of the latest revision of the DOE *Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements (DOE G 424.1-1B),* particularly with regard to Evaluation of the Safety of the Situation (ESS) and Justification for Continued Operations (JCO).

Background

Improving the Efficiency of the USQ Process

- Applicability Assessments/Entry Condition
  - Entry Condition for USQ process defined by DOE approved USQ procedure
    - Identifies what enters the USQ process and what does not, and thus no paperwork
    - No documents nor documentation retention requirements per 10 CFR 830.203
  - Low value added (if any) yet high volume workload for many changes
  - Question: Can we improve the process by eliminating paperwork for changes which can not effect the nuclear facility?
    - Changes outside nuclear facilities that can not impact nuclear facilities (e.g., changes in the cafeteria)
    - Institutional procedures (e.g., 401k procedures, travel procedures)
    - Procedures in general
      - Check to ensure procedures within Safety Basis and no mistakes regarding DSA/TSR (value added)
      - Confusion over the lower threshold for a procedure subject to the USQ process
    - Routine maintenance as operators understand the concept
      - Housekeeping/calibration, etc.
      - Exact replacement/AEP (formerly like-for-like and like-in-kind)
        - Question: Inside or outside the USQ process?
        - Question: Are they more appropriately handled within the design and work control processes since it is exclusively a technical equivalency evaluation rather than a safety basis consideration?
      - Other issues?

Improving the Efficiency of the USQ Process

- Disconnect between DOE-STD-3009 and DOE USQ Guide
  - Margin of Safety
    - DOE G 424.1-1A specifies one USQD question concerning margin of safety and provides a generic definition of explicit and implicit
    - When Safety Limits are not specified, DOE-STD-3009 is silent on implicit margin of safety and does not require identification of such in the DSA
    - Creates great difficulty for preparers to respond to the questions
    - Causes problems with USQD results when the contractor's idea of what is margin of safety differs from auditor

Improving the Efficiency of the USQ Process

- Disconnect between DOE-STD-3009 and DOE USQ Guide (cont'd)
  - DOE G 424.1-1A specifies that certain USQD questions be evaluated against a DSA that is not required by DOE-STD-3009 to adequately address EITS
    - DOE G 424.1-1A specifies three USQD questions concerning EITS and provides a generic definition while 3009 is silent and does not require identification or technical discussion of such equipment in the DSA
      - Creates great difficulty for preparers to respond to the questions
      - Causes problems with USQD results when the contractor's idea of what is EITS differs from auditor
  - EFCOG USQ teleconferences addressed this issue
    - Consensus resolution is to obtain DOE approval of EITS (list of EITS, IDID, DID) via a formal DOE approval of:
      - DSA
      - Separate EITS list
      - USQ Procedure containing EITS list

Improving the Efficiency of the USQ Process

- Disconnect between DOE-STD-3009 and DOE USQ Guide (cont'd)
  - Safety Management Programs (SMPs)
    - DOE G 424.1-1A specifically identifies as subject to the USQ process those procedures "that implement a safety management program described in the safety basis" as well as implicitly described procedures
    - Proper treatment of SMPs in DSAs is defined explicitly in DOE-STD-3009
    - DOE-STD-3009 does not identify the DSA as a vehicle for safety management program compliance with the myriad of relevant statutes, regulations and DOE orders to which such programs must answer
    - Specifically DOE-STD-3009 states:
      - "Program commitments (e.g., radiation protection, maintenance, quality assurance) encompass a large number of details that are more appropriately covered in specific program documents (e.g., plans and procedures) external to the DSA. The cumulative effect of these details, however, are recognized as being important to facility safety, which is the rationale for a top level program commitment becoming part of the safety basis."
      - "An overall commitment made in a DSA is that the contractor will not change the facility configuration underlying the documented safety basis without implementing and completing the unreviewed safety question (USQ) process. However, situations do occur where a USQ process is not necessary. For example, a stipulation to have a radiation protection program in the administrative control section of the TSR is a commitment; however, changes to specific program provisions do not require going through the USQ process. Further clarification of such interpretations can be found in DOE G 424.1-1, "Implementation Guide for Use in Addressing Unreviewed Safety Question (USQ) Requirements"."

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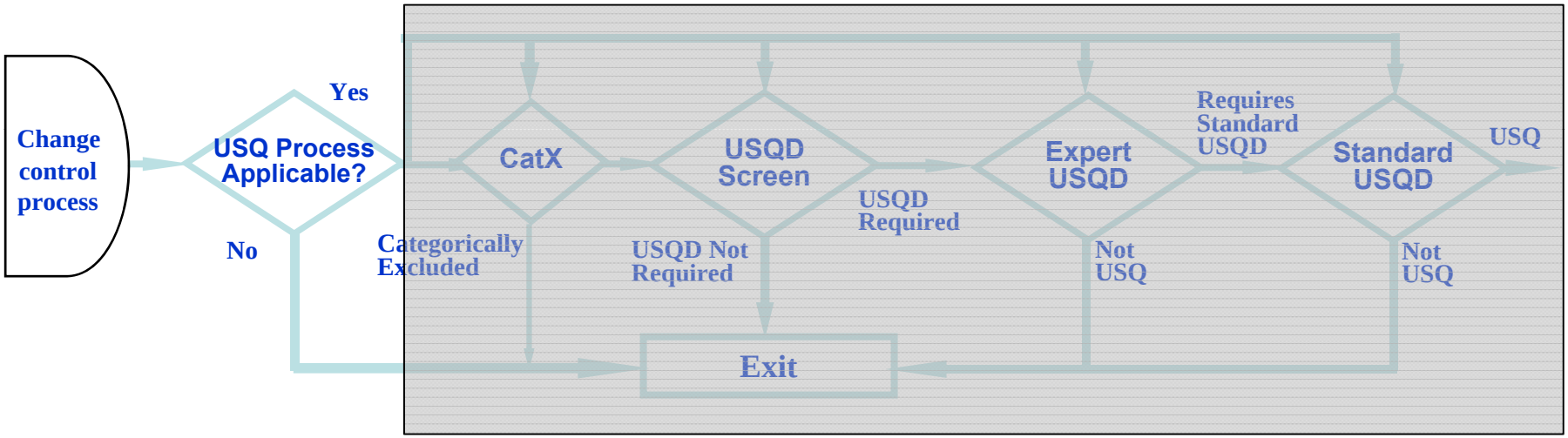
Summary of Expert USQD Discussions

- Consensus during discussions has been:
  - Expert USQD is Rule compliant
  - Expert USQD is good; will help improve efficiency of the USQ process
  - *Let's do expert USQDs!*
- Key aspects
  - Training requirements
  - Enforcement
  - Initial monitoring of implementation
    - Some pilots
    - Others will not require a pilot as it has been adequately demonstrated
      - Subtleties best addressed by expeditious/live monitoring during initial implementation
  - Technical details vary
    - Length of training (e.g., 1 year)
    - Length in facility (e.g., 1 year)
    - Details of margin of safety question
    - Approval mechanism with CTA, etc.

Integrated USQ Process

- Overall purpose of the USQ process is to determine who has approval authority – DOE or the contractor.
  - USQ process integrated into facility change control processes
    - Change control processes ensure that USQ process is integrated into existing procedures, or that new procedures are developed as necessary, and that need for entry into USQ process is not overlooked.
  - Purpose of USQ process is not to duplicate other aspects of the change control process or safety management programs covered by other DOE requirements (e.g., 10 CFR 835, 10 CFR 851).
    - Not quality assurance, configuration management, design control, nor whether change is safe.
  - Note that as part of facility change control process, applicability assessments determine if USQ process is applicable; they are not USQ documents.

USQ Process Integration with Change Control Process



Relationship of USQ process and change control.
Highlighted portion of figure summarizes USQ process.

Expert USQD Details

- Short form, expert-based USQD, tailored to evaluate simpler proposed changes, may significantly increase efficiency of USQ Process.
  - Purpose of Expert USQD is to quickly determine, with minimal documentation, whether change is not a USQ, or requires further evaluation in Standard USQD.
  - Expert USQD Worksheet may be applied to certain proposed changes where it is readily apparent to safety basis professionals that the change cannot create a USQ.
  - Expert USQD incorporates a review checklist, modeled after USQD questions.
    - However, checklist questions may be adjusted at discretion of local DOE Site Office.
  - Outcomes of Expert USQD are either:
    - Proposed change does not represent a USQ, or
    - Change requires additional review via a Standard USQD.
  - For those proposed changes found not to represent a USQ, the preparer may document any considerations deemed relevant as to why it is readily apparent a USQ would not exist.
    - Documentation should be brief and focused, and not be commensurate with level of detail for a Standard USQD.
    - Expert USQDs still require same review and approval as a Standard USQD, although they must also be designated as "experts".

Expert USQD Details (continued)

- Contractor's USQ procedure should specify stricter qualification requirements for "experts."
  - Intent is not to plug any preparer available into a rotating "expert" slot.
  - Experts should have:
    - More lengthy career experience than average USQD preparer,
    - Thorough knowledge of facility and its operations as demonstrated by documented, sustained experience at facility, and a history of preparing USQDs for that facility.
- Contractor's USQ procedure should include mechanism for formally defined list of experts approved by contractor's institutional safety basis organization.
  - Stringent qualification requirements for "experts" are key to implementation.
  - Only most experienced and trained personnel in facility, its processes, and Safety Basis should qualify to sign as expert preparer.

Summary of Recommendations to Improve Efficiency

- Expert USQD is one of several recommendations to improve efficiency in the SAWG USQ white paper
- Other white paper recommendations include:
  - Clarification of Applicability Assessment
    - Temporary or Permanent Changes in a Facility
      - Routine maintenance package
      - Interim state hazards
    - Temporary or Permanent Changes in the Procedures
      - Safety management program procedures
      - Administrative procedures
  - Screening
  - Clarification of sufficient level of documentation for Applicability Assessments, Screening, Standard USQD
  - Clarification of Terminology/Definitions
  - Conduct DOE Complex-wide meeting reflecting USQ process improvements to ensure a consistent approach across DOE Offices, Field Offices, Service Centers, and Assessment Organizations